several cotyledons of diverse sizes and irregular positions. The earlier in the summer observations are made on the germinating seeds the better, since the smaller embryos are usually soon crowded out and killed by the growth of the larger. One may either observe the sprouting seeds growing naturally among the old plants, or gather ripe fruits and grow the seeds in pots the next spring. Similar observations upon *O. Rafinesquii* are desirable, especially as it is not known whether or not that species is polyembryonic at all. — W. F. GANONG, Smith College.

LIST OF VERMONT MYXOMYCETES WITH NOTES.

LUELLA C. WHITNEY.

THE following list of forty-six species is a complete catalogue of the Myxomycetes thus far found in Vermont. This group of plants was studied at Middlebury College by Miss F. M. Sutton and the writer, who took their material from the collections made by Dr. E. A. Burt of Middlebury College and Prof. L. R. Jones of the University of Vermont. Speciments of all but two are now in the College Herbarium.

Badhamia utricularis Berk., *B. magna* Pk., *B. macrocarpa* Rost.; *Physarum leucopus* Link, *P. viride* Pers., *P. murinum* List., *P. nutans* Pers., *P. didermoides* Rost., *P. cinereum* Pers., *P. bivalve* Pers., *P. contextum* Pers., *P. virescens* Ditm.; *Fuligo septica* Gmelin, *F. ochracea* Pk.; *Leocarpus vernicosus* Link; *Chondrioderma spumarioides* Rost., *C. globosum* Rost.; *Didymium farinaceum* Schrad.; *Spumaria alba* DC.; *Stemonitis fusca* Roth, *S. splendens* Rost., *S. ferruginea* Ehrenb., *S. Smithii* Macbr.; *Comatrichia typhoides* Rost.; *Lamproderma physaroides* Rost.; *Brefeldia maxima* Rost.; *Cribraria macrocarpa* Schrad.; *Tubulina fragiformis* Pers.; *Siphoptychium Casparyi* Rost.; *Enteridium Rozeanum* Wing.; *Trichia favoginea* Pers., *T. persimilis* Karst., *T. scabra* Rost., *T. varia* Pers., *T. contorta* Rost., *T. fallax* Pers.; *Hemitrichia rubiformis* Pers., *H. clavata* Pers., *H. Serpula* Pers.; *Arcyria ferruginea* Sauter, *A. albida* Pers., *A. punicea* Pers., *A. incarnata* Pers., *A. flava* Pers.; *Perichaena populina* Fr.; *Lycogala miniatum* Pers.

SIPHOPTYCHIUM CASPARYI Rost., which has hitherto been recorded for only two American stations, the Adirondacks and the White Mountains, was found growing profusely on a log near Lost Pleiad Pond. In this species the cylindrical sporangia are united to form an aethalium,

which is dark brown in color and which spreads to several inches in circumference. The presence of a central columella, connecting with the walls by lateral threads, is the constant feature which distinguishes this species from *Tubulina fragiformis*.

PHYSARUM LEUCOPUS Link, which has been recorded in this country for the western States only, was found in Middlebury, growing on a decayed log. The ball-like sporangia, which have membranous walls beset with lime, are supported on smooth white stalks also containing lime. The capillitium consists of large lime knots connected by slender hyaline threads. The snowy whiteness of the stalks is the means of separating this species from *P. nutans*., while the lax capillitium and the large knots containing large lime granules distinguish this species from *P. globuliferum*.

BADHAMIA MAGNA Pk., a purely American species and of unusual occurrence, has been found twice in Vermont. The gray, globose sporangia with wrinkled iridescent walls are raised on clustered, yellow stalks. The capillitium is formed of threads or bands connected by angular expansions having small granular deposits of lime. *Badhamia hyalina* is sometimes confused with this species because of the similarity of capillitium structure, but by comparing the large warted and clustered spores of this species with the spores of *B. magna*, which are smaller and scattered, the difficulty is cleared.

PHYSARUM CINEREUM Pers. is not an unusual species, yet it is worthy of note because its capillitium shows Badhamia characteristics. The sporangia are sessile and irregular in shape, with lime granules in the membranous walls. The capillitium consists of branching bands and large white lime knots with a very few hyaline threads. These bands were so densely charged with lime that the species seemed to be *B. panicea*, but the presence of a few hyaline threads and the size of the small light-colored spores marked the species as *P. cinereum*. A specimen from the collection was submitted to Mr. Arthur Lister for his opinion, and he regards it as an undoubted but very remarkable form of *P. cinereum* Pers.

FULIGO OCHRACEA Pk. is another American species seldom found. The sporangia are very closely interwoven to form an aethalium with a gray cortex containing lime. The capillitium consists of very short hyaline threads connecting large yellow lime knots. The shortness of these threads together with the large spores are the only points of difference between this species and the closely allied *Fuligo septica*.

LYCOGALA MINIATUM Pers. and HEMITRICHIA CLAVATA Rost. are our most widely distributed species. These species are found from July to December on tree stumps and decayed bark.

STEMONITIS FUSCA Roth and TRICHIA FALLAX Pers. are other very common species found in late summer and autumn on twigs, leaves and logs.

LIQUIDAMBAR AT GREENWICH, CONNECTICUT. — Both in the Berzelius Catalogue of Plants within Thirty Miles of New Haven and in Bishop's Catalogue of Plants of Connecticut, *Liquidambar Styraciflua*, L., is recorded as growing at Greenwich, Connecticut, with the further note that this appears to be the northeastern limit of its natural growth. There is no specimen from the State in the herbarium of the late Professor Eaton, and up to November, 1898, I had never had any more definite information in regard to this station; but happening to pass through Greenwich in that month, I came upon it accidentally.

On May 1, 1899, I revisited the spot in company with a friend. We had no difficulty in finding the Liquidambar again, but were somewhat disappointed that the flowers were immature. I took, however, a quantity of budded branchlets, which were placed in water and developed into fair specimens.

The Liquidambar grows in a piece of marshy woodland about a half mile southwest from the railway station at Cos Cob, and is easily found by taking the first road crossing the track west of this station and following it south a little less than a half mile. It grows in considerable abundance over an area of at least five or six acres and reaches a size (by estimate) of two feet in diameter and seventy feet in height. The march of "improvement," in the shape of summer residences and their grounds, is close upon it, but it is to be hoped that the swampy nature of the ground may preserve to New England a station for the natural growth of this beautiful tree.

Owing to the earliness of the season and limited time for botanizing, little else of interest was observed on this trip. At Mianus the cliff by the Mianus River was white with *Arabis lyrata*, L., which appear to be scarce in Connecticut except on the trap ridges of the Connecticut valley; and nearer Stamford was a tree of *Pinus*